

1           [0069]                           ABSTRACT OF THE DISCLOSURE

2           [0070]    A vapor phase deposition method and apparatus for the application of thin  
3           layers and coatings on substrates. The method and apparatus are useful in the fabrication  
4           of electronic devices, micro-electromechanical systems (MEMS), Bio-MEMS devices,  
5           micro and nano imprinting lithography, and microfluidic devices. The apparatus used to  
6           carry out the method provides for the addition of a precise amount of each of the reactants  
7           to be consumed in a single reaction step of the coating formation process. The apparatus  
8           provides for precise addition of quantities of different combinations of reactants during a  
9           single step or when there are a number of different individual steps in the coating  
10          formation process. The precise addition of each of the reactants in vapor form is metered  
11          into a predetermined set volume at a specified temperature to a specified pressure, to  
12          provide a highly accurate amount of reactant.